Message

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Sent: 7/11/2014 11:41:35 PM
To: Henning, Loren [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3aae3e0d0d764aa5af728c00cb7ada14-LHENNING]
Subject: FW: Treasure Island: Final Historical radiological Assessment -- Supplemental Technical Memorandum dated July 2014

FYI

From: Terry, Robert
Sent: Friday, July 11, 2014 2:38 PM
To: Stensby, David
Cc: Kennedy, John
Subject: Treasure Island: Final Historical radiological Assessment -- Supplemental Technical Memorandum dated July 2014

On your request I have reviewed the Final Historical Radiological Assessment – Supplemental Technical Memorandum (HRASTM) for Naval Station Treasure Island (TRIE-2205-0038-0158) dated July 1, 2014. The document was prepared for the Base Realignment and Closure (BRAC) Program Management Office West/Naval Facilities Engineering Command by TriEco-Tt, a joint venture of TriEco LLC and Tetra Tech EM Inc. of San Diego.

The report provides findings that were not discovered during preparation of the previous Historical Radiological Assessment, dated February 2006. It also includes an updated Conceptual Site Model (CSM), historical research, and a review of activities at TI since the original HRA was published. The report identifies 11 new radiologically impacted areas (that were not identified in the 2006 HRA) that contain contamination from ^{137}Cs, ^{226}Ra, and ^{232}Th. Generally, newly identified ^{137}Cs was limited to sealed sources, which have little or no potential for leakage; newly identified ^{226}Ra was limited to radioluminescent paint and other objects that are usually known as "deck markers;" and newly identified ^{232}Th was limited to use in lens coatings and glass, which contain only small amounts of thorium.

Many of the newly identified radioactive materials are associated with personnel training and with decontamination of ships from Operation Crossroads and subsequent surface atomic bomb tests. I should add that materials associated with atomic bomb tests would have been contaminated with a large variety of radioactive fission products at the time they were at Treasure Island, but those radioisotopes mostly had short half-lives; only ^{90}Sr and ^{137}Cs could now be present in enough quantity even to detect and would present little or no hazard now or in the future.

The most significant findings in the HRASTM pertain to devices that contain ^{226}Ra and are identified in the report as "low level radiological objects (LLROs)." The report states that these devices most likely had been disposed in solid waste disposal areas (SDWAs) in Site 12. According to the revised Conceptual Site Model, the radium sources (devices) were removed from the SDWAs and found their way into the Site 12 housing area when the site was graded prior to housing construction. All of Site 12 is now described as impacted by ^{226}Ra. Quite a bit of remedial activity has already been completed at Site 12 but devices that contain radium are still found with some frequency.

^{226}Ra contamination was also found in Lot 69, which had been used as a salvage yard. ^{226}Ra and ^{232}Th were found on the roof of Building 3 and in drains to the sanitary sewer, where the Navy had an optical shop. The report does not elaborate on whether lenses were coated with thorium onsite, or thorium-coated devices were only used and stored onsite.

Miscellaneous radionuclides with very short half-lives were used in two training areas that were known as *USS Pandemonium* (the training site was moved from its initial location to a second location); typically, relatively small quantities of these short-lived radionuclides were sprayed or scattered around the training area and naval trainees were

then assigned to find the contaminated areas with a Geiger counter, just as they would do on ships that were brought in to San Francisco Bay for decontamination. The short-lived radionuclides have long since decayed away to nothing. The initial training site was described as non-impacted in the 2006 HRA. However, that same area was used as a SDWA after the training site was moved, and is now considered to be an impacted area, due to the Navy's expectation that some radioactive materials were likely disposed in the SDWA.

The report describes an incinerator where some Low Level Radiological Objects (LLROs) were likely to have been burned. Unfortunately I could not ascertain from the report where that incinerator was located. Incinerators of this type do not ordinarily contain much, if any, residual radioactive material, but obviously the area will require a survey before all questions will have been answered.

The entire report is 116 pages and a second volume contains appendices. The report and appendices exhaustively describe all the facts that have been gathered on this subject since the HRA was first published in 2006 and I recommend that you refer to the report, or ask me to track down the details as questions arise. However, in my opinion the report has no new surprises and describes all the relevant facts that relate to either speculation or actual contamination that will require additional remedial work.